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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/750,387	12/28/2000	David M. Hoffman	15-CT-5419	6352

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EXAMINER	
KAO, CHIH CHENG G	
ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 07/05/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/750,387	HOFFMAN, DAVID M.	
	Examiner	Art Unit	
	Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *12-20* is/are allowed.

6)☒ Claim(s) *1-3,7,8 and 11* is/are rejected.

7)☒ Claim(s) *4-6,9 and 10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *5* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admission of prior art (AAPA) in view of Pfoh et al. (US Patent 5,400,379). AAPA discloses a method of imaging an organ (Page 5, line 1) comprising scanning with a source and detector coupled to a rotating gantry and reconstructing an image (Fig. 6 and 9). However, AAPA does not seem to specifically disclose acquiring data from a plurality of staggered half detector segments.

Pfoh et al. discloses acquiring data from a plurality of staggered half detector segments (Fig. 4b and abstract, line 4).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to acquire data from a plurality of staggered half detector segments of Pfoh et al. with the imaging method of the applicant's admission of prior art since one would be motivated to obtain more acquire multiple slices during a single revolution of the gantry as shown by Pfoh et al. (col. 1, lines 58-69).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of Pfoh et al. as applied to claim 1 above, and in further view of Cuppen (US Patent 6,259,766). AAPA in view of Pfoh et al. suggests a method as recited above. However, AAPA does not seem to specifically disclose acquiring data with different resolutions as a function of position in the x-direction.

Cuppen discloses acquiring data with different resolutions as a function of position in the x-direction (Fig. 3).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to acquire data with different resolutions of Cuppen with the imaging method of the applicant's admission of prior art in view of Pfoh et al. since one would be motivated to perform faster and more accurate volume reconstruction with a limited number of detector elements as shown by Cuppen (col. 1, lines 56-62).

3. Claims 3 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. (US Patent 5982846) in view of AAPA. Regarding claim 3, Toth et al. discloses a detector array (Fig. 4) with a plurality of removable detector modules (Fig. 5, #20). However, it does not seem to specifically disclose a plurality of staggered half detector segments abutted about a centerline.

AAPA discloses staggered half detector segments abutted about a centerline (col. 4, lines 16-18, and Fig. 9).

It would have been obvious, to one of ordinary skill in the art at the time the invention was made, to have the staggered half detector segments of AAPA with the device of Toth et al.,

since one would be motivated to have obtain as much data from the radiation as implied in Fig. 9 of AAPA.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA as applied to claim 3 above, and further in view of Cuppen. Toth et al. in view of AAPA suggest a device as recited above. However, Toth et al. does not seem to specifically disclose different number of outputs per module as a function of location in the x-direction.

Cuppen teaches different number of outputs per module as a function of location in the x-direction (col. 5, lines 45-55).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the different output of Cuppen with the device of Toth et al. in view of AAPA, since one would be motivated to perform faster and more accurate volume reconstruction with a limited number of detector elements as shown by Cuppen (col. 1, lines 56-62).

5. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toth et al. in view of AAPA and Cuppen as applied to claim 7 above, and further in view of Hsieh (US Patent 5974109). Toth et al. in view of AAPA and Cuppen sugget a device as recited above. However, Toth et al. does not seem to specifically disclose paired cells.

Hsieh teaches paired cells (col. 2, lines 30-32).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to have the paired cells of Hsieh with the device of Toth et al. in view of

AAPA and Cuppen, since one would be motivated to avoid having to make any significant hardware and software changes to known multislice CT systems as shown by Hsieh (col. 2, lines 35-37).

Allowable Subject Matter

6. Claims 12-20 are allowed.

7. Claims 4-6, 9, and 10 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4, and 9, prior art does not specifically disclose or fairly suggest a radiation detector including a first type of module having flexible cables in two directions and a first type of module having flexible cable extending in one direction in combination with all the limitations in the respective claims and base claims.

Regarding claim 12, prior art does not specifically disclose or fairly suggest a CT imaging system including staggered half-detector segments wherein higher spatial resolution near a centerline and a lower spatial resolution distal to the center are used to attenuate data by utilizing the lower spatial resolution to reduce artifacts in combination with all the limitations in the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (703) 605-5298. The examiner can normally be reached on M - Th (8 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (703) 305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gk
June 30, 2002

ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800